

# Central Plateau Deep Vadose Zone Strategy



*June 2010*



U.S. DEPARTMENT OF  
**ENERGY**

# Hanford's Deep Vadose Zone Challenge

## *Central Plateau Cleanup Strategy Implementation*

- **Important and Near Term Problem.**

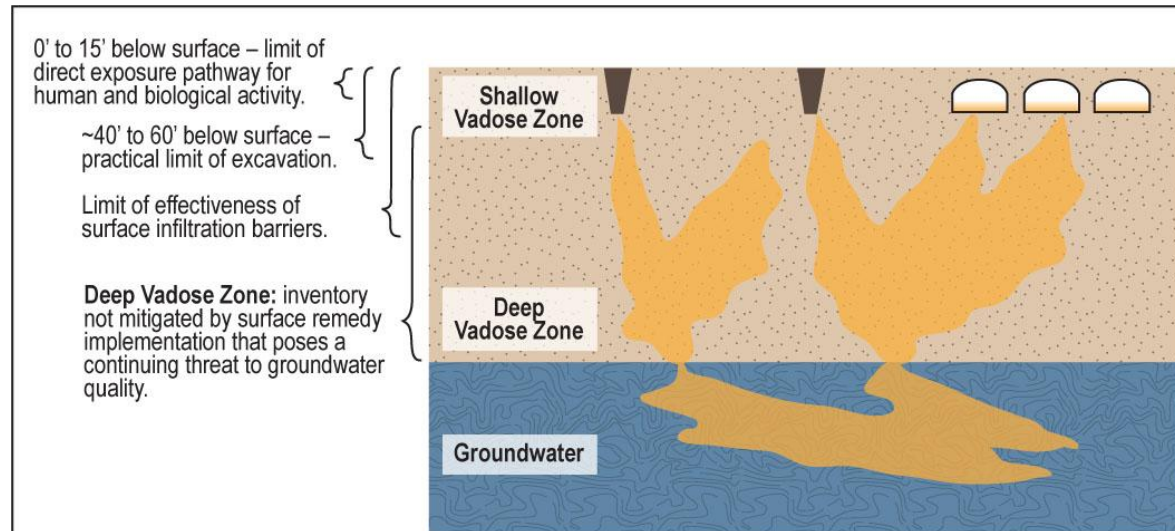
- There are several newly emerging groundwater plumes at 10X – 100X Drinking Water Standards.
- Primary contaminants of concern are Technetium-99, and Uranium

- **Unique Technical Challenge.**

- Difficult to demonstrate protectiveness of surface remedies
- Difficult to characterize
- Few technical solutions

- **Requires “Project-Like” Focus.** The deep vadose zone of the Central Plateau needs to be addressed through a focused and high priority effort.

- 30-50 sites and tank farm WMAs
- Commingled tank farm and non-tank farm plumes
- Treatability testing for the deep vadose zone has been initiated.



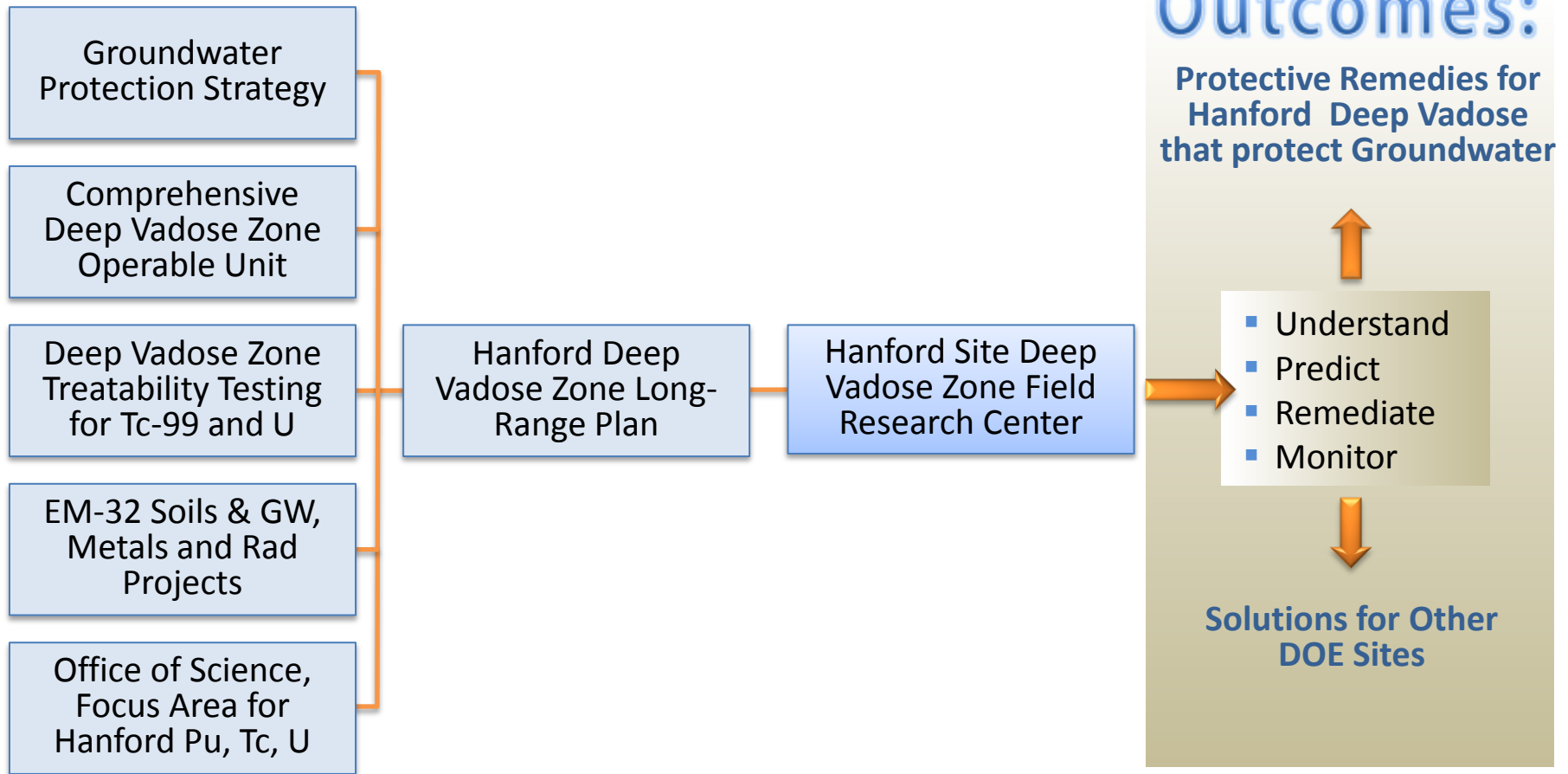
# Deep Vadose Zone Strategy – *Desired Outcomes*

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- Improve understanding of the nature and extent of deep vadose zone contamination and processes that affect fate and transport.
- Improve predictive capabilities for describing contaminant fate and transport as well as flux from the vadose zone to the groundwater.
- Develop, test and deploy effective methods for remediating contaminated areas.
- Develop and deploy effective monitoring methods for assessing the performance of remedies.

# Integrated Approach to Addressing Hanford's Deep Vadose Zone Challenges

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# Hanford's Deep Vadose Zone Program

## *Central Plateau Cleanup Strategy Implementation*

- Purpose: Establish a robust program to bring substantial DOE resources to develop lasting solutions to Hanford's deep vadose zone contamination challenges.
  - Establish an integrated deep vadose zone project that supports treatability testing, decision making and remediation across the Central Plateau.
  - Develop and maintain a Program Plan for investing in deep vadose zone science, technology, engineering and demonstration.
  - Develop an interface with the Hanford Deep Vadose Zone Field Research Center that is the focal point for investigation and resolution of critical deep vadose issues at Hanford and within the DOE Complex.

# Deep Vadose Zone Strategy – *Actions for FY-2010*

## *Central Plateau Cleanup Strategy Implementation*

- Realign TPA milestones and project baselines to provide better focus and more realistic schedule for deep vadose zone remedy selection. [DOE-RL and ORP]
- Continue Field Treatability Testing for Technetium-99 and Uranium [CHPRC]
- Prepare Long-Range Plan to support Hanford's Deep Vadose Zone project – integrated approach to provide scientific and technical basis. [CHPRC and PNNL]
- Develop cooperative initiative (Field Research Center) with EM-30 for investments in finding new approaches to this challenge – technical planning workshop in July. [Hanford, EM-30, Office of Science]



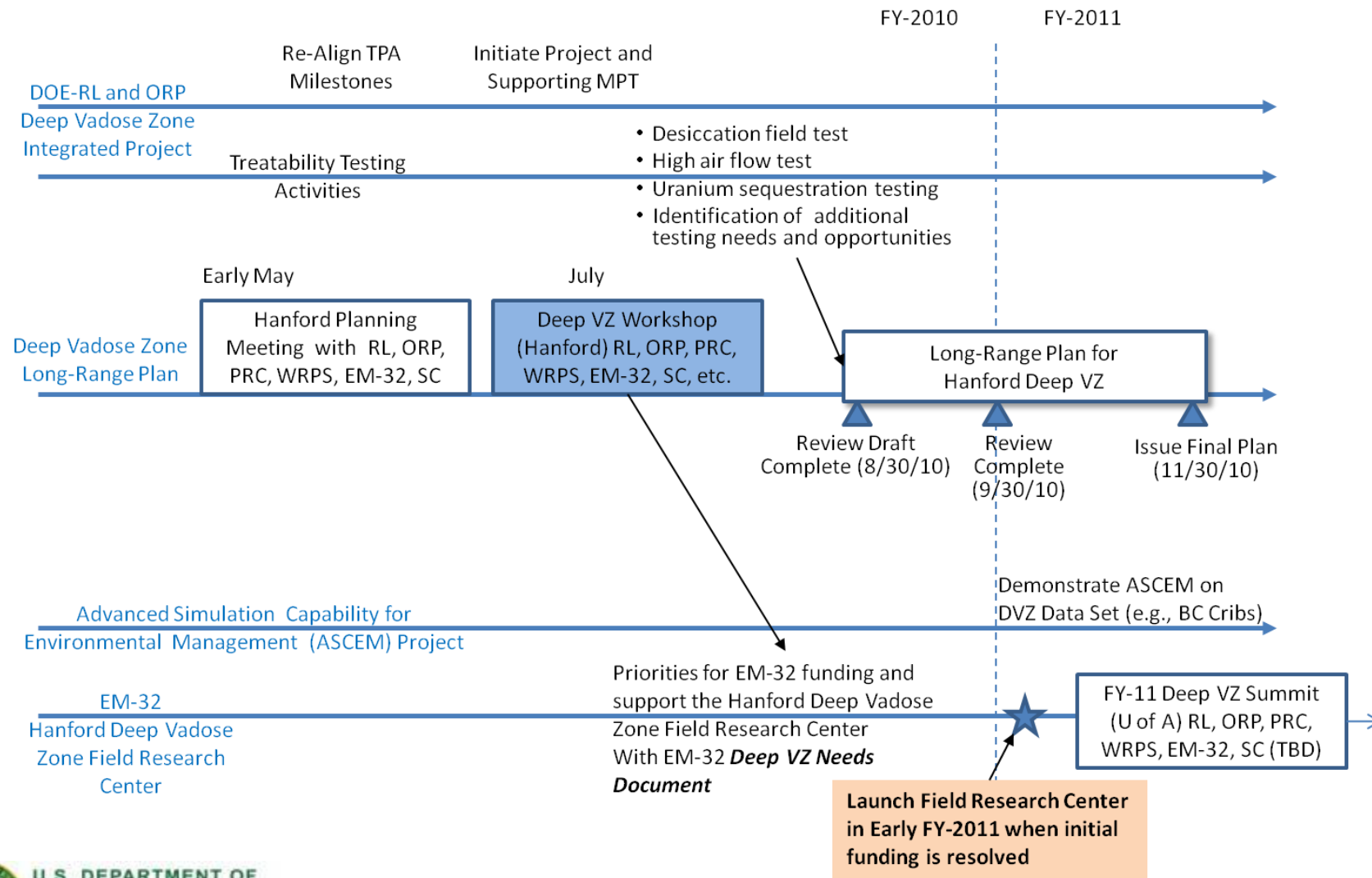
**EM** *Environmental Management*

safety ❖ performance ❖ cleanup ❖ closure



# Near-Term Schedule for Deep Vadose Zone Project Activities

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# Backup Slides

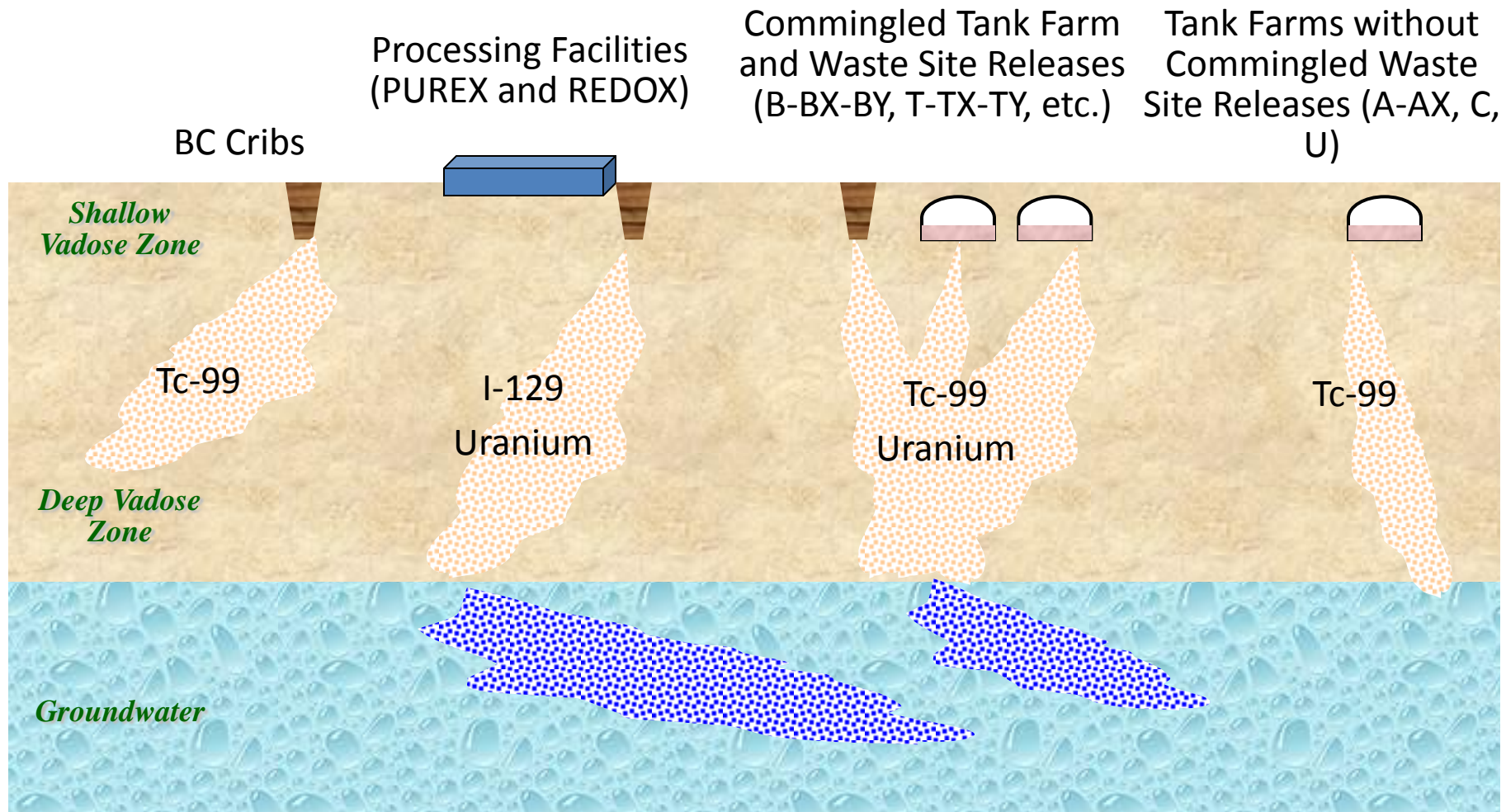
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# Current Situation – Nature of the Problem

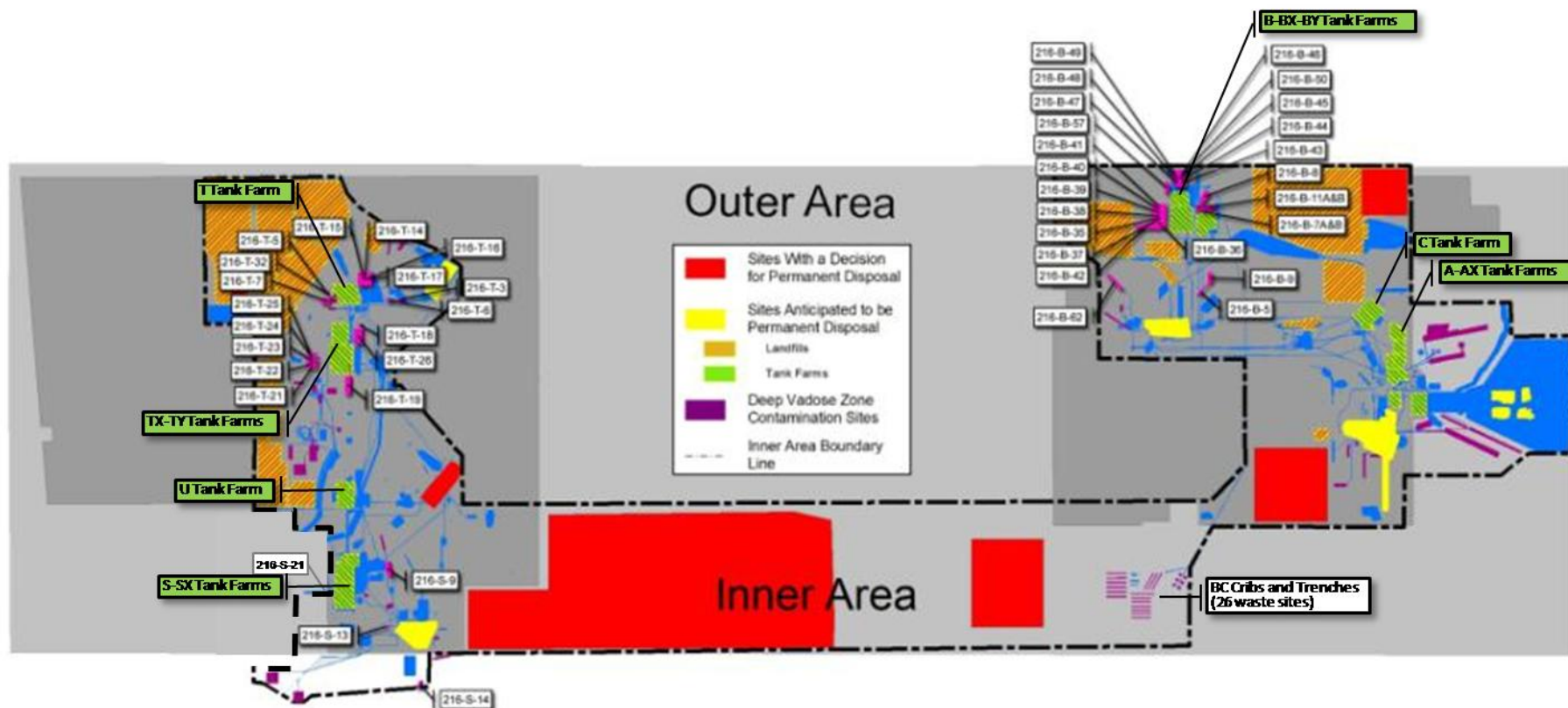
## Multiple Types of Problems

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# Deep Vadose Zone Waste Sites Locations

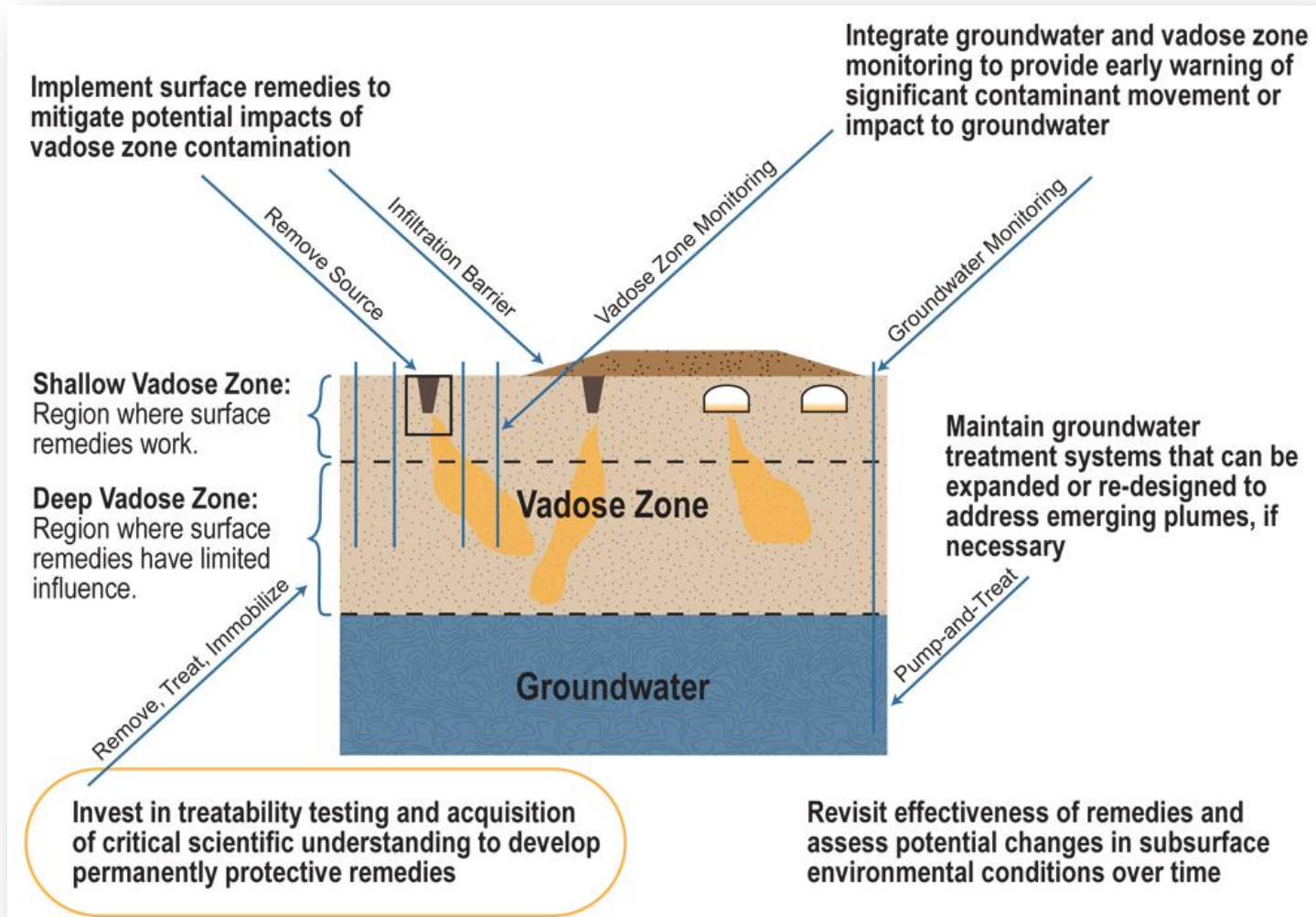
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# Groundwater Protection Strategy

## *DOE is developing and implementing a robust strategy*

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# Decision Approach for Deep Vadose Sites and WMA Closure

